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EXAMINER

FOWLKES, ANDRE R

ART UNIT PAPER NUMBER

2192

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/20/06 has been entered.

2. Claims 2-13, 15 and 48-55 are pending. Claims 2, 5-13 and 15 have been amended. Claims 16-47 have been canceled. New claims 48-55 have been added.

Claim Objections

3. Claim 48 is objected to because of the following informalities: steps "(a), (b) and (c)", performed by the *first* computer program, and steps "(a), (b) and (c)", performed by the *second* computer program should be --(a), (b), (c), (d), (e) and (f)-- to aid in clarity while prosecuting the application. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-13 and 15-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller et al., (Keller), U.S. Patent No. 6,662,312 on view of Laviolette et al., (Laviolette), U.S. Patent No. 6,779,134.

As per claim 48, Keller discloses **a computer test system for testing software on one or more of a plurality of platforms and with one or more of a plurality of languages**, (col. 1:52-59, "the present invention provide(s) a software-testing automation system for testing a plurality of deployed images that are spread across multiple software platforms wherein each deployed image includes a test component", and col. 4:53-64, "Because testing software in a large-scale software implementation over a network with much of the software on different platforms, includes different virtual machines and different operating systems, embodiments of the present invention involve testing software over all these different software environments. The different software environments may include graphical user interfaces written in different programming languages, UNIX code, database interactions, etc. A software-testing automation system of the present invention allows a user to build tests that exercise multiple software platforms"), **the computer test system comprising:**

- a first computer program module, configured to:

(a) receive test conditions defining tests on developed computer program products (col. 3:41-42, "test tool operative to receive commands", and

these commands are used to perform tests on developed computer program products),

(b) receive group information, the group information defining a selected platform and language for each of one or more groups (col. 4:25-26, "with each deployed image including a test component", and the deployed images are analogous to the group information for a selected platform/language),

(c) store the test conditions and group information as a test packet in a database, the test packet defining one or more tasks to be performed for a particular group (col. 4:25-26, "with each deployed image including a test component", and the test component is analogous to the test packet defining tasks to be performed for a particular group and col. 3:59-61, "the test engine is configured to run a database query"),

- a second computer program module, configured to:

(a) select a test package from the database (col. 6:28, "specify the test cases to be run").

Keller doesn't explicitly disclose:

(b) search for test clients that are available to perform a test job including tasks for a particular group defined in the test package, wherein searching for test clients comprises searching according to loading capacity and if no test clients are idle, waiting for an idle test client,

(c) automatically assign the test job to an idle test client.

However, Laviolette, in an analogous environment, discloses:

(b) search for test clients that are available to perform a test job including tasks for a particular group defined in the test package, wherein searching for test clients comprises searching according to loading capacity and if no test clients are idle, waiting for an idle test client (col. 3:4-7, “provides the hardware (i.e. platform) configuration data for use in determining which of the plurality of test stations is a suitable test station for testing target software to be tested”, and 3:53-55, “selecting ... a test station that is free to execute or schedule a job to be executed”, and col. 7:30-46, “In one embodiment, the test job bundle configuration module assigns a different test station for a user in response to detection of test station unavailability associated with a desired test station hardware configuration... If no particular test station is selected, the system selects one for the user”),

(c) automatically assign the test job to an idle test client (col. 7:30-46, “In one embodiment, the test job bundle configuration module assigns a different test station for a user in response to detection of test station unavailability associated with a desired test station hardware configuration”).

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of Laviolette into the system of Keller to have:

(b) search for test clients that are available to perform a test job including tasks for a particular group defined in the test package, wherein searching for test clients comprises searching according to loading capacity and if no test clients are idle, waiting for an idle test client,

(c) automatically assign the test job to an idle test client.

The modification would have been obvious because one of ordinary skill in the art would have wanted to use the well known and well documented technique of resource utilization analysis to improve the accuracy and efficiency of software testing (Lavolette, col. 2:8-9).

As per claim 2, the rejection of claim 48 is incorporated, and further Keller discloses that **the second computer program module comprises a management component that is configured to separate one of the test jobs into subtasks, and to order the subtasks into a reordered job** (col. 4:20-21, "the engine allows the tester to mix test steps that will be executed by different tools in one test case").

As per claim 3, the rejection of claim 2 is incorporated, and further Keller discloses that **the management component is configured to separate a plurality of the test jobs into subtasks, and to order the subtasks of the plurality of test jobs into a reordered job** (col. 4:20-21, "the engine allows the tester to mix test steps that will be executed by different tools in one test case").

As per claim 4, the rejection of claim 3 is incorporated, and further Keller discloses that **the management component is configured to add a subtask corresponding to a computing environment** (col. 7:10-15, "the user asks the test automater to update a test case ... the user can update theses test steps, delete them or add new ones").

As per claim 5, the rejection of claim 48 is incorporated, and further Keller discloses **a test component configured to create a personalized test package for the assigned test client based upon the platform and applications available at the idle test client** (col. 4:61-63, "A software-testing automation system of the present invention allows a user to build tests that exercise multiple software platforms all in one test", this statements discloses that the test component personalizes the "one test" to be used on multiple different platforms).

As per claim 6, the rejection of claim 48 is incorporated, and further Keller doesn't explicitly disclose **a component configured to calculate an execution time for the test job, and if the calculated execution time exceeds a predetermined allowable execution time, prevent the test job from being executed and automatically assign a different test job to the idle client.**

However, Laviolette, in an analogous environment, discloses **a component configured to: calculate an execution time for the test job, and if the calculated execution time exceeds a predetermined allowable execution time, prevent the**

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test job from being executed and automatically assign a different test job to the idle client, (col. 10:56-65, "the test job bundle includes data identifying ... a per job maximum time limit such as indicated at 610, a job start time 618 and a per test software maximum time limit", and col. 8:11-14, "the test job bundle may include a job execution timeout period 610 representing the estimated time required to run the identified software test", and col. 7:30-46, "In one embodiment, the test job bundle configuration module assigns a different test station for a user in response to detection of test station unavailability associated with a desired test station hardware configuration").

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of Laviolette into the system of Keller to have **a component configured to calculate an execution time for the test job, and if the calculated execution time exceeds a predetermined allowable execution time, prevent the test job from being executed and automatically assign a different test job to the idle client**. The modification would have been obvious because one of ordinary skill in the art would have wanted to improve software testing efficiency (Laviolette, col. 2:8-9).

As per claim 7, the rejection of claim 48 is incorporated, and further Keller discloses **a database component configured to store the test jobs** (col. 7:21, "test case repository (i.e. database component for storing the test jobs)").

As per claim 8, the rejection of claim 7 is incorporated, and further Keller discloses that **the database is configured to store a particular test job in a pending status prior to the particular test job being assigned to an idle client** (col. 7:19-21, "Once the Test Automater has this information it stores the description (and status) in the header of the test case and saves the changes to the test case in the test case repository").

As per claim 9, the rejection of claim 7 is incorporated, and further Keller discloses that **the database is configured to store a particular test job in an assigned status while the particular test job is assigned to an idle client** (col. 7:19-21, "Once the Test Automater has this information it stores the description (and status) in the header of the test case and saves the changes to the test case in the test case repository").

As per claim 10, the rejection of claim 7 is incorporated, and further Keller discloses that **the database is configured to store a particular test job in a completed status after the particular test job has been run by one of the test clients** (col. 7:30-35, "the test automator displays the list of available test cases (and their results/status)").

As per claim 11, the rejection of claim 48 is incorporated, and further Keller discloses **a message queue for the idle test client that is associated with the**

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second computer program module, the message queue for storing information about test jobs that have been assigned to a test client (col. 7:30-35, "the test automator displays the list of available test cases (that have been assigned to selected machines)).

As per claim 12, the rejection of claim 48 is incorporated, and further Keller discloses **a high-level interface that permits direct access between the second computer program module and at least one test client** (col. 2:17-19, "preferably at least one of the known testing ports is a transmission control protocol/Internet protocol (TCP/IP) well known port").

As per claim 13, the rejection of claim 12 is incorporated, and further Keller discloses **a thin client that is configured for communicating between the high-level interface and the at least one test client, the thin client being configured to translate information from a test client to information that may be utilized by the high-level interface** (col. 2:17-19, "preferably at least one of the known testing ports is a transmission control protocol/Internet protocol (TCP/IP) well known port").

As per claim 15, the rejection of claim 48 is incorporated, and further Keller discloses that **the second computer program module assigns the idle test client based upon the present imaging of the idle test client** (col. 1:52-59, "the present invention provide(s) a software-testing automation system for testing a plurality of

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deployed images that are spread across multiple software platforms wherein each deployed image includes a test component configured to accept a connection on a known testing port, and in which a test engine runs a test on an image by requesting a connection on the known testing port”, and 2:40-41, “the software platforms include multiple different virtual machines and operating systems”, and Figure 1, and associated text (e.g. 4:50-5:39) shows that tests selected for their corresponding machine images).

As per claim 49, the rejection of claim 48 is incorporated, and further Keller discloses that **the computer test system further comprises a plurality of test machines** (col. 1:52-59, “the present invention provide(s) a software-testing automation system for testing a plurality of deployed images that are spread across multiple software platforms wherein each deployed image includes a test component configured to accept a connection on a known testing port, and in which a test engine runs a test on an image by requesting a connection on the known testing port”, and 2:40-41, “the software platforms include multiple different virtual machines and operating systems”, and Figure 1, and associated text (e.g. 4:50-5:39) shows that tests selected for their corresponding machine images).

As per claim 50, the rejection of claim 49 is incorporated, and further Keller discloses that **at least one of the test machines is remote from the first and second computer program modules** (col. 1:52-59, “the present invention provide(s) a software-testing automation system for testing a plurality of deployed images that are

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spread across multiple software platforms wherein each deployed image includes a test component configured to accept a connection on a known testing port, and in which a test engine runs a test on an image by requesting a connection on the known testing port”, and 2:40-41, “the software platforms include multiple different virtual machines and operating systems”, and Figure 1, and associated text (e.g. 4:50-5:39) shows that tests selected for their corresponding machine images).

As per claims 51-55, this is a method version of the claimed system discussed above, in claims 48, 2-6 and 8-13, wherein all claimed limitations have also been addressed and/or cited as set forth above. For example, see Keller/Laviolette system (Keller 1:52-4:63 and Laviolette 3:4-55).

Response to Arguments

5. Applicants arguments have been considered but they are not persuasive.

In the remarks, the applicant has argued substantially that:

1) The cited art discloses that a test is assigned to a test station by a user instead of automatically, as required by the claims, at p. 8:19-24.

Examiner's response:

1) The examiner disagrees with applicant's characterization of the applied art. Laviolette discloses that col. 7:30-46, “In one embodiment, the test job bundle

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configuration module assigns a different test station for a user in response to detection of test station unavailability associated with a desired test station hardware configuration... If no particular test station is selected, the system selects one for the user," as addressed in the above art rejection.

In the remarks, the applicant has argued substantially that:

2) The cited art does not disclose that the test is assigned to a test station as a result of waiting for an idle test station, at p. 8:24-9:3.

Examiner's response:

2) The examiner disagrees with applicant characterization of the applied art. Lavolette discloses at 3:53-55, "selecting ... a test station that is free to execute or schedule a job to be executed", as addressed in the above art rejection. In other words, the Lavolette system waits for a free station by scheduling a job to execute at the next soon to be idle test station.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre R. Fowlkes whose telephone number is (571) 272-3697. The examiner can normally be reached on Monday - Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571)272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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